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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/616,987

07/11/2003

Andreas vom Schloss

PNL 21342

2783

7590

07/25/2005

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EXAMINER

NGUYEN, TUYEN T

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,987	SCHLOSS ET AL.	
	Examiner	Art Unit	
	TUYEN T. NGUYEN	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, *“the elastic insulating element for insulation from high voltage which is in the form of a hollow cylinder mounted on the winding element on a section facing the frontal surface of such winding element, mountable on a spark plug with a terminal of said spark plug received in the hollow portion thereof and having at least in part disposed between the winding element and the sheet metal jacket”* and *“an elastomeric insulating element having an opening therethrough, mountable on a spark plug with a terminal portion of said spark plug extending into said opening in electrical contact with a terminal of said secondary winding, and a portion disposed between said core element and said casing”* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1 and 2, applicant fails to disclose an adequate written description of *the elastic insulating element for insulation from high voltage which is in the form of a hollow cylinder mounted on the winding element on a section facing the frontal surface of such winding element, mountable on a spark plug with a terminal of said spark plug received in the hollow portion thereof and having at least in part disposed between the winding element and the sheet metal jacket.*

Regarding claim 20, applicant fails to disclose an adequate written description of *an elastomeric insulating element having an opening therethrough, mountable on a spark plug with a terminal portion of said spark plug extending into said opening in electrical contact with a*

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terminal of said secondary winding, and a portion disposed between said core element and said casing.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1 and 2, applicant fails to provide an enablement of *the elastic insulating element for insulation from high voltage which is in the form of a hollow cylinder mounted on the winding element on a section facing the frontal surface of such winding element, mountable on a spark plug with a terminal of said spark plug received in the hollow portion thereof and having at least in part disposed between the winding element and the sheet metal jacket.*

Regarding claim 20, applicant fails to provide an enablement of *an elastomeric insulating element having an opening therethrough, mountable on a spark plug with a terminal portion of said spark plug extending into said opening in electrical contact with a terminal of said secondary winding, and a portion disposed between said core element and said casing.*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claims 1-2, applicant should clarify which one [an elastic insulating element or the winding element] mountable on a spark plug. Applicant should clarify the structure/arrangement of the spark plug with a terminal being received in the hollow portion thereof and having at least in part disposed between the winding element and the sheet metal jacket. Applicant should clarify what "having at least in part disposed between the winding element and the sheet metal jacket [the elastic insulating element, the winding element or the spark plug]. Claims 3- 19 inherit the defects of the parent claim.

Regarding claim 20, applicant should clarify the structure/arrangement of *a spark plug with a terminal portion of said spark plug extending into said opening in electrical contact with a terminal of said secondary winding.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 11-15 and 19-20, as best understood in view of the rejections under 35 USC 112 first and second paragraphs, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevacqua [US 3,716,038] in view of Oosuka et al. [US 6,114,935].

Bevacqua discloses an ignition system [figures 1-2] comprising:

- an ignition coil [16] having a mounting portion [13];

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- a spark plug [14] mountable in the mounting portion [13] and having terminal [11] connecting with the ignition coil; and
- an elastic insulating element [12], mountable on the spark plug disposed between the ignition coil and the spark plug, formed of a hollow cylinder mounted in the ignition coil.

Bevacqua discloses the instant claimed invention except for the specific of the ignition coil.

Oosuka et al. discloses an ignition coil [figure 4] comprising:

- a central core [21];
- a winding structure includes primary and secondary windings [14, 15] wound about the central core;
- an out core [22];
- cavity arranged around the primary and secondary windings [figure 4];
- at least one elastic insulating member [42, 43] disposed between the winding structure and the outer core; and
- resin sealing [20] disposed between the winding structure and the outer core.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to use the ignition coil of Oosuka et al. in Bevacqua and disposed the elastic insulating element between the winding structure and outer core for the purpose of sealing the ignition coil.

Regarding claim 19, Bevaqua discloses the elastic insulating member having a ribbed configuration [26].

Regarding claims 3-4 and 11-12, Bevacqua in view of Oosuka et al. discloses the instant claimed invention except for method use to apply the elastic insulating element.

The specific method steps use to apply the elastic insulating element would have been an obvious design consideration for the purpose attaching the elastic insulating element to the winding structure.

Claims 8, 10, 16 and 18, as best understood in view of the rejections under 35 USC 112 first and second paragraphs, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevacqua in view of Oosuka et al. [US 6,114,935], as applied to claims 17, 11-15 and 19-20 above, and further in view of Oosuka et al [US 6,525,636].

Bevacqua in view of Oosuka et al. '935 discloses the instant claimed invention except for the multi-layer outer core and sealing compound filled the cavity.

Oosuka et al. '636 discloses an ignition coil [figure 10] comprising a multi-layered outer core [25] and resin compound [26] filled in cavity around winding structure [figure 11].

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to use a multi-layered outer core for Bevacqua, as modified, as suggested by Oosuka et al. '636, for the purpose of controlling the magnetic flux.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to filled resin in the cavity around the winding structure and outer core of Bevacqua, as modified, as suggested by Oosuka et al. '636, for the purpose of preventing the winding structure from cracking.

Regarding claims 10 and 18, Bevacqua, as modified, discloses the instant claimed invention except for the outer core comprise more than one layer.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to use a plurality of outer core in Bevacqua, as modified, for the purpose of controlling the magnetic flux.

Claims 9 and 17, as best understood in view of the rejections under 35 USC 112 first and second paragraphs, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevacqua in view of Oosuka, as applied to claims 17, 11-15 and 19-20 above, and further in view of Hamer et al. [US 2003/0058077 A1].

Bevacqua, as modified, discloses the instant claimed invention except for an insulating sheet or a shrunk-on tube.

Hamer et al. discloses an ignition coil [10] comprising a winding structure [figure 1] having a heat shrinkable tube [36] arranged on the outer surface of the winding structure.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include a heat shrinkable tube on the outer surface of the winding structure of Bevacqua, as modified, as suggested by Hamer et al., for the purpose of preventing moisture and protecting the winding structure.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUYEN T. NGUYEN whose telephone number is 571-272-1996. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ELVIN ENAD can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTN TTN

Tuyen T. Nguyen